



3rd OECD Roundtable on the Circular Economy in Cities and Regions
Challenges and Opportunities in the Post-COVID-19 Era

18-19 May 2021, on-line

HIGHLIGHTS



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Key take-away messages

Challenges and opportunities in the post-COVID-19 era

- **The COVID-19 crisis** highlighted the unsustainable nature of many environmental and social trends and **provided renewed momentum for action on production and consumption patterns**, in particular by capitalising on the potential of the circular economy.
- **The pandemic response further reinforced the role of the circular economy.** For example, in Ireland, it provided an opportunity to accelerate the work on waste to face increased plastic waste from Personal Protective Equipment (PPE), remote working reduced transport emissions, supply chains were shortened, and consumers went local.
- **The COVID-19 crisis increased the sense of community and participation:** in Ireland, virtual meetings allowed further participation during the consultations for the new waste action plan. In Glasgow, strong communities, with networks and enterprise capable of sustaining neighbourhoods, endured COVID-19 lockdowns more robustly. A number of initiatives redistributed food surplus (e.g.: community fridge models).
- **COVID-19 stimulated innovation.** Circular Flanders found that companies with a higher level of circularity faced significantly fewer challenges than their linear counterparts. The latter faced financial and supply chain-related problems, while the former's flexibility, innovation and close collaboration with supply chain partners made it easier to navigate the crisis.
- **COVID-19 highlighted the need to accelerate efforts to mitigate climate change and increase resilience.** The Spanish government put the spotlight on the green recovery for water, protecting resources and using the digital transformation to monitor its use.
- **The circular economy has an important role in addressing new needs that emerged in cities during the COVID-19 crisis.** Regulatory and financial incentives are key to kick-start these models that can make local communities more socially, economically and environmentally resilient.

Linking the blue and circular economy in cities and regions

- **Water efficiency should be improved to face the impacts of climate change on water availability, but governance challenges remain.** Spain, for example, needs to overcome three main challenges to increase the reuse of treated wastewater: i) multi-level governance, ii) coordination and iii) awareness raising. In Latin America and Caribbean (LAC) only 17 of the 26 IDB member countries have a regulatory framework for water reuse; seven countries have banned the sale of reused water and Colombia is the only country that promotes the reuse of sludge from wastewater for energy.
- **Many financing tools are already in place and the circular economy in water can build on knowledge and experience relating to climate change and green bonds.** Concessional loans, blended finance, social risk investment, guarantee schemes, insurance, and bonds already work well, but governments must take a proactive approach and redefine how they calculate the return on

investment of projects, taking into account social and environmental impacts, as well as the cost of inaction.

- **Working with stakeholders enables the identification of systemic changes**, with opportunities demonstrated through pilot projects. For example, the case of the bio factory in Granada, Spain, illustrates mutual coordination between public and private sectors, for urban and industrial water use.
- **Cooperation between cities** is important for knowledge sharing as a means to encourage technology transfers (e.g. to produce energy from sludge; to adapt regulation for water reuse; to treat solid bio-waste).

Linking the green and circular economy in cities and regions towards COP26

- **Circular economy can contribute to reducing by 45% greenhouse gas (GHG) emissions embedded in the production of everyday products.** Until recently, the majority of climate-related policy discussions and investments have focused on accelerating the adoption of renewable energy and energy efficiency. However, these do not effectively tackle most of the emissions resulting from industry, land use and built environment change.
- There is a need for **dematerialisation, rethinking ownership, and shifting from efficiency to sufficiency** as part of the “Circular economy 2.0” to reach climate neutrality goals.
- **Many vital transitions are set to take place within cities, particularly in the built environment which is a key area for decarbonisation.** Circular economy solutions in the built environment include more efficient building utilisation, recycling and reusing.
- **Local and national policy makers should collaborate** to identify solutions offered by circular economy models in cities and how they contribute to Nationally Determined Contributions.

Circular cities and regions: how to measure progress

- The OECD highlights the **lack of a systemic approach towards circular economy indicators**, as well as: the lack of an agreed definition of the circular economy; the absence of a harmonised measurement framework; and a strong focus on waste but a lack of focus on closing loops.
- What needs to be measured is **how these material inputs circulate through the economy and how the circularity of reuse, repair and recycle strategies progresses.** Measuring the impact of such strategies on the environment and the security of supply is also important.
- Circular economy metrics should rely on i) **design and demand** balance metrics (e.g. demand/need for mobility, demand for new houses per person; ii) **utilisation and “wastefulness” metrics** (e.g. utilisation of key assets such as housing, mobility); and iii) **material (re)use metrics** (e.g. lifetime of products, repair rates, reuse rates, recycling rates, and waste).
- Circular economy related indicators should also concern the **enabling conditions** (e.g., innovations for the circular economy, leadership, ownership of the topic at the city level, systemic factors such as collaboration, etc.) and **finance** (especially company-level measurement).

Introduction

As part of the [OECD Programme on the Circular Economy in Cities and Regions](#), the [3rd OECD Roundtable on the Circular Economy in Cities and Regions](#) (Challenges and Opportunities Post-COVID-19) took place virtually on 18 and 19 May 2021. The Roundtable gathered more than 400 participants from local, regional and national governments, European institutions (European Commission, European Investment Bank, European Economic and Social Committee), networks of cities and regions (ICLEI, Eurocities) as well as stakeholders from civil society, academia, the private sector, international organisations and foundations (World Economic Forum, Ellen MacArthur Foundation).

The 3rd OECD Roundtable on the Circular Economy in Cities and Regions sought to:

- Launch a new OECD report: [The Circular Economy in Granada, Spain](#).
- Share and discuss lessons from ongoing policy dialogues with Glasgow (United Kingdom), Tallinn (Estonia) and Ireland, within the [OECD Programme on the Circular Economy in Cities and Regions](#).
- Take stock of the challenges and opportunities of COVID-19 recovery programmes for the transition to a circular economy in cities and regions.
- Learn from peers about how the circular economy is linked to global blue and green agendas in cities and regions, and how to accelerate the implementation of these agendas ahead of international events such as [COP26](#).
- Advance the measurement agenda of the circular economy in cities and regions.

1 From a sectoral to a systemic approach: how the circular economy can accelerate the blue and green economy in cities and regions

Linking the blue and circular economy in cities and regions

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Ms. Oriana Romano, Head of Unit, Water Governance and Circular Economy, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD, introduced the keynote speakers of the report launch (Ms. Lamia Kamal-Chaoui and Mr. Luis González Ruiz), the four panellists (Mr. Teodoro Estrela, Mr. Sergio I. Campos G., Ms. Desireé Marín and Ms. Cristina Arango), and moderated the panel discussion on how the circular economy can accelerate the blue and green economy in cities and regions.

Launch of the OECD report “The Circular Economy in Granada, Spain”

Ms. Lamia Kamal-Chaoui, Director of the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE) welcomed participants to the Roundtable and to the launch of the report on [The Circular Economy in Granada](#). She thanked Mr. Luis Salvador, Mayor of Granada, and Mr. Luis González Ruiz, Deputy Mayor of Granada, for the strong political commitment to the report. The COVID-19 crisis highlighted the unsustainable nature of many environmental and social trends and provided renewed momentum for action on production and consumption patterns, in particular by capitalising on the potential of the circular economy. The efforts of different sectors and firms need to be supported by coherent policies, governance structures, and legal and regulatory frameworks that ensure all stakeholders are engaged, and that can foster innovation. The strong spatial dimension of these enabling mechanisms means that cities and regions have a powerful role to play in driving the transformation.

“Whilst more and more sectors and firms are embracing the benefits of the circular economy, these efforts need to be supported by policies, governance structures, and legal and regulatory frameworks that are coherent across policies.”

Over the past three years, the [Programme on the Circular Economy in Cities and Regions](#) of the [OECD Centre for Entrepreneurship, SMEs, Regions and Cities](#) has worked with over 50 cities and 500 stakeholders from OECD countries to produce evidence and policy guidance to support the transition of

local and regional governments to the circular economy. Policy dialogues with cities have included [Valladolid](#) (Spain), [Groningen](#) (Netherlands), [Umea](#) (Sweden) and now, [Granada](#) (Spain).

Granada has the opportunity to become a leader in the circular economy, setting a path for other cities to follow. Despite the hardship brought by the COVID-19 pandemic, with the Province of Granada experiencing a 12% GDP reduction and an unemployment rate of 23.3% in the first quarter of 2021, the crisis is proving to be an opportunity for Granada to rethink urban policies and transition to the circular economy. The Spanish Recovery, Transformation and Resilience Plan ([España Puede](#)) provides strong impetus by setting aside 37% of funds for the green agenda, including the circular economy.

The city of Granada is not new to the circular economy. The transformation of the wastewater treatment plant into a bio factory initiated in 2015, managed by the mixed ownership company Emasagra (the Municipal Water Supply and Sanitation Company), allowed the increasing reuse of water and its transformation into energy. The *Plan for Granada towards Sustainability* and Granada's *Smart City Strategic Plan 2020* also aims at making Granada a smart European city through the implementation of new technologies in the management of municipal services and resources.

Granada can go one step further in its transition to the circular economy by focusing on its strengths: tourism and science. Granada is among the top three destinations in Andalusia, but tourism can negatively affect land use, water and food consumption and accelerate environmental degradation. Applying a circular economy approach to tourism can ensure that it becomes a more sustainable source of revenue. This could include reducing the use of disposable products; including circular principles in hotel business models; and reducing food waste by selling surplus food or donating it to food banks. On science, Granada hosts many technological clusters and can exploit opportunities to develop links between digitalisation and the circular economy, using data and technologies that prevent waste and transform it into resources.

The OECD report on The Circular Economy in Granada, Spain suggests several recommendations, of which three were highlighted:

- First, Granada would benefit from defining a circular economy strategy with sector-specific goals, following the example of pioneer cities such as Amsterdam (Netherlands), Paris (France) and London (UK) have done. For Granada, a strategy would include specific educational and communication programmes to help promote a circular culture. Inspiring examples of initiatives in other cities like Valladolid (Spain) include “Circular Weekends”, where entrepreneurs join forces on circular projects, or “circular economy ambassadors” in London (UK) to raise awareness at the workplace.
- Second, Granada could facilitate dialogue with the regional authority of Andalusia, which has developed a [regional circular economy strategy for waste management](#), to align ambitions and join efforts to monitor progress. The city should also engage with universities, technological hubs, and the business sector to identify circular solutions in waste management, transport, food and hospitality among others.
- Finally, Granada can put in place the right regulatory and financial conditions for the transition. One way to lead by example could be through applying a circular economy lens to public procurement as cities like Amsterdam (Netherlands) and Ljubljana (Slovenia) are doing.

Ms. Kamal-Chaoui reaffirmed the readiness of the [OECD Programme on the Circular Economy in Cities and Regions](#) to support the city of Granada towards implementing the Action Plan concluding the report that charts the concrete ways to make these recommendations happen. The Programme's road to the circular economy transition will continue with case studies from Glasgow (United Kingdom), Montreal (Canada), Tallinn (Estonia) and Ireland, for which preliminary findings were presented during the Roundtable.

Mr. Luis González Ruiz, Deputy Mayor of the City of Granada, Spain, expressed his gratitude to the OECD team for the report, the result of a two-year policy dialogue. Mr. González Ruiz highlighted the role

of water, which is very important for Granada for historical and cultural reasons, as the starting point for the circular economy in the city. Beyond the synthesis and analysis of initiatives, the report represents a starting point for enhanced action on the circular economy in Granada, in the framework of the [Andalusian Circular Bioeconomy Strategy](#) and the [Spanish Circular Economy Strategy](#) (*España Circular 2030*, June 2020).

“Granada is water, Granada is green, and water has played a major role in the history of the city of Granada. Water is the starting point of the circular economy in Granada.”

Granada has taken two main steps towards the circular economy:

- First, the implementation of a working group on the circular economy in the construction sector, which accounts for 55% of material use for economic activity in Spain, in the urbanism area, with eight other European cities as part of [URBACT](#). The aim of the project is to implement shared measures on the circular economy in the built environment sector. The results of this initiative will be presented in 2022, along with an action plan for architecture and engineering stakeholders in the sector.
- Second, the creation of a green ring (“*anillo verde*”), a tree-planting project running until 2030 to regenerate the environment and improve living conditions for Granada’s citizens, aiming to bring together different political, economic and academic stakeholders around the town hall. The University of Granada, Emasagra and other businesses and citizens play a key role in this project and in the city.

The city will carefully consider the recommendations provided by the OECD to accelerate the transition towards the circular economy.

Panel discussion

Mr. Teodoro Estrela, Director of the Directorate General for Water, Ministry for the Ecological Transition and the Demographic Challenge, Spain, highlighted the key role played by water in the new [Spanish Circular Economy Strategy](#). Beyond reusing water, the strategy recognises the key role of water in all productive processes and in biodiversity. Climate change will have a strong impact on water, with a reduction in water resources of up to 40%, and an increasing number of extreme water events, including flooding and droughts.

“Beyond the simple reuse of water, the Spanish Circular Economy Strategy (España Circular 2030) recognises the key role of water in all productive processes and in biodiversity.”

Mr. Estrela also emphasised the fragile balance of water resources in Spain, and the need to avoid excessively altering ecosystems. Improved control of water use and resources through the monitoring of robust indicators data is a priority for Spain, particularly in light of the objective to improve efficiency and water reuse by 10% by 2030. Measures foreseen by hydrological plans include improving knowledge of water use and changing the regulatory framework to promote water reuse, with a planned investment of EUR 20 million per annum over the five-year planning cycle [2022-2027](#). Groundwater in Spain requires more metering and water use control. Agriculture is also a priority for Spain in terms of water efficiency improvements, as the sector is the first water user in the country. An estimated 60% of irrigation is efficient, but the remaining 40% of traditional irrigation needs to be addressed by water efficiency enhancement measures.

COVID-19 highlighted the need to accelerate efforts to mitigate climate change and increase resilience. As such, the Spanish government wishes to put the spotlight on the green recovery for water, protecting resources and using the digital transformation to monitor its use. Treated wastewater is needed to meet increasing demand for water and reduced supply, exacerbated by climate change. The soon to be approved National Plan for Treatment, Sanitation, Efficiency, Saving and Reuse (*Plan Nacional de*

Depuración, Saneamiento, Eficiencia, Ahorro y Reutilización (DSEAR) identified three main challenges to increase the reuse of treated wastewater: i) multi-level governance and coordination, ii) financing (as the use of treated wastewater is more expensive than groundwater); and iii) awareness raising.

On the importance of knowledge, education and awareness raising, **Mr. Teodoro Estrela** highlighted young people's increasing awareness of the importance of water and the need for circularity from the waste perspective, but there is a need to provide a better understanding of the link between the two from the public administration side. There is also a strong need to build awareness among farmers, which the EU regulation on wastewater will help to do.

Mr. Sergio I. Campos G., Water and Sanitation Division Chief at the Inter-American Development Bank (IDB), emphasised the central role of the circular economy in IDB's work and the need to shift away from a linear economy in Latin America and Caribbean (LAC). Moreover, LAC is the region with the lowest recycling rate, with 5% of solid waste recycled, and just 1% of wastewater is reused for irrigation and industry. The region concentrates one-third of the world's available freshwater resources, but water-stressed regions make up 35% of the territory, which should incentivise the reuse of water. In that sense, the Paris Agreement and the impetus to build back better from the COVID-19 crisis are key drivers of change.

"The LAC region concentrates one-third of the world's water resources, but water-stressed regions make up 35% of the territory. This should incentivise the reuse of water."

Mr. Campos provided an overview of the three main challenges within the transition to a circular water economy in LAC:

- **Water governance:** Only 17 of the 26 IDB member countries have a regulatory framework for water reuse; seven countries have banned the sale of reused water; and Colombia is the only country that promotes the reuse of sludge from wastewater for energy.
- **Financing:** Just 6% of private financing in the region is invested in water and sanitation. New financing instruments such as performance-based contracts or green bonds are starting to be used, but need to be pushed further. A harmonised international taxonomy would help make blended finance options for Water, Sanitation and Hygiene (WASH) more attractive.
- **Lack of access to water and sewage:** 34 million people in LAC do not have access to clean drinking water and 106 million do not have access to safely managed sanitation services.

Mr. Campos underscored the important role of innovation in closing gaps and the need for governance to facilitate innovation, change mentalities and economic ecosystems to scale up start-up solutions.

Regarding financing schemes to increase circularity in water, Mr. Sergio I. Campos G. underlined the public sector's role in unblocking and scaling up financing through regulatory frameworks, incentives, procurement and blended finance. In LAC, for example, extended producer responsibility is becoming increasingly important and regulation is being updated in this area. Robust information systems are needed to drive national efforts in this direction.

In terms of financing, many existing tools, including concessional loans, blended finance, social risk investment, guarantee schemes, insurance, and bonds already work well, but governments must take a proactive approach and redefine how they calculate the return on investment of projects, taking into account social and environmental impacts, as well as the cost of inaction. The circular economy in water can build on climate change and green bond knowledge. The IDB is working on the design and development of thematic bonds. However, an international harmonised taxonomy is necessary to attract private investment.

“In terms of financing instruments, there is no need to reinvent the wheel: the instruments are there, but the public sector must take a proactive approach and redefine how the return on investment of projects is calculated, accounting for social and environmental costs, as well as the cost of inaction.”

Ms. Desirée Marín, Head of the Sustainability Department at CETaqua (Water Technology Centre), SUEZ Spain, highlighted three steps to provide incentives for the circular economy in water to become the norm:

- First, following the example of Granada, evaluate the infrastructure to understand the possibility of transition from a wastewater treatment plant to a biofactory: i) analysing water, material and energy flows; ii) evaluating the current design and functioning; and iii) identifying potential synergies with the surroundings (e.g. urban areas, agricultural land, industry) to determine potential circular economy strategies. Indicators can enable the evaluation of economic (return on investment -ROI), social (stakeholder engagement, quality of jobs) and environmental benefits, and life cycle analysis is an important tool to do so. Working with local administrations is also essential to determine the best way forward.
- Second, explore the market and new business models: analyse the cost of recovering the treated wastewater, the potential business case and customers, integrating the cost of treatment and reuse of by-products (sludge) and the price that customers would be prepared to pay for it (e.g. farmers for nutrients).
- Third, define regulatory frameworks that are favourable to circularity. A good example is the highly effective EU regulation on single-use plastics. The contract framework is also important: sustainability must become a core part of contracts, for instance, by moving away from paying companies per tonne of sludge managed. Finally, providing fiscal incentives and rewarding good behaviour are also very relevant tools available at both national and subnational level.

Ms. Desirée Marín proceeded to share insights from the multi-stakeholder engagement process engaged at the Gavá water treatment plant in Barcelona, Spain. Working with stakeholders has enabled the identification of systemic changes that can be made to enhance circularity, with opportunities beyond the water sector being demonstrated with pilot projects. The plant does this via the EU [Intelligent Cities Challenge](#). Ms. Desirée Marín emphasised the importance of understanding how to assess environmental benefits beyond technical solutions. The case of Granada illustrates mutual comprehension and coordination between public and private sector, which allows initiatives to be developed and implemented smoothly.

“Working with a wide range of stakeholders enables the identification of systemic changes that can be made to enhance circularity within and beyond the water sector.”

There is also high potential for the circular economy in industrial water, as material recovered from industrial wastewater (e.g. metals, textiles, etc.) can feed back to the sector, as well as the water itself. In both cases – urban and industrial water – projects with strong stakeholder engagement are always the most effective and successful because they enable systemic change. Collaboration models between industrial players that already have water treatment plants and smaller companies looking for solutions can also help.

Ms. Desirée Marín concluded her intervention by putting forward Suez Spain's collaboration with the [CECI](#), Universities and the water company of Barcelona, as well as innovative models of PPPs, as enablers of demonstration projects showing how water can generate energy and reusable resources for other sectors.

Ms. Cristina Arango, Director of the Bogotá Water and Sewage Agency (EAAB), Colombia, started her intervention by stating that the current debate on the long-term land-use plan for the city is proving to be a crucial turning point for the circular economy in Bogotá. The new long-term land-use plan proposal

includes elements such as water treatment and waste separation, and will guide the city over the coming years. Ms. Arango highlighted progress, but also the need to take further action, on four key aspects:

- **Solid bio waste from water treatment:** While some waste is used for the regeneration of land damaged from mining, much of it still goes to waste. Today, 39 000 m³ of solid bio waste is treated by the EEAB, and this capacity is set to double with the completion of the new Canoas water treatment plant, which will likely be the one of the largest in Latin America, treating 70% of Bogota's wastewater. Currently, 2.3 million customers are connected to EAAB services, which benefit around 8 million people.
- **Energy from sludge:** The EAAB is scaling up operations to transform sludge into energy in its water treatment plant, allowing improved energy efficiency. It is also ensuring that new wastewater treatment plants will follow a similar model.
- **Reuse of water at the user level** is also needed, but the regulatory framework does not currently allow for this. Nevertheless, water is being recirculated to improve efficiency at some of the company's drinking water treatment plants.
- **Reuse of different oils:** The lack of a defined collection method and destination for used oils leads to inefficiency in the sewage network. EAAB is promoting behaviour change through campaigns and strategic alliances in other sectors to make users a part of the solution to this problem.

Ms. Cristina Arango highlighted the importance of knowledge sharing as a means to encourage technology transfer. Cooperation between cities is important, but collaboration between the public and private sectors is also key to understand processes, as policies can fail to consider technical aspects sufficiently. Before collaborating, each actor must understand where they find themselves on their circularity journey: to what extent they are avoiding the creation of waste, reusing and valuing it, and if they are regenerating ecosystems. In the case of EAAB, most efforts so far have focused on valuing waste streams resulting from water treatment processes and ecosystem regeneration. By doing so, the company is protecting water sources such as the Chingaza Paramo and the supporting ecological infrastructure for water services.

“Cooperation between cities is important, but collaboration between the public and private sectors is key to understand processes, as policies can fail to sufficiently consider technical aspects.”

As a concluding statement:

- **Mr. Teodoro Estrela** emphasised the importance of cities and regions in the circular economy transition to build better links among stakeholders, as well as the importance of orientating principles (such as the [OECD Principles on Water Governance](#)) and indicators to move forward efficiently.
- **Mr. Sergio I. Campos G.** stated that circularity will replace sustainability, and that companies, cities and governments that do not take an active stance in circularity will lose time, money, relevance and resilience to climate change and other shocks.
- **Ms. Desirée Marín** raised the importance of paying attention to innovation in governance models, social perception, business models and implementation barriers beyond technical solutions for cities.
- **Ms. Cristina Arango** highlighted the circular economy as a solution for post-pandemic economic reactivation, in terms of job creation and increased efficiency.

Linking the green and circular economy in cities and regions towards COP26

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Mr. Tadashi Matsumoto, Head of Unit, Sustainable Development and Global Relations, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD, introduced the keynote speaker (Mr. Ken Webster), the OECD speaker (Mr. Ander Eizaguirre), the four panellists (Ms. Anna Richardson, Ms. Burcu Tuncer, Ms. Patr cia Iglecias and Mr. James Pennington), and moderated the panel discussion on linking the green and circular economy in cities and regions towards COP26.

Keynote speech by Mr. Ken Webster, Director, International Society for Circular Economy, IS4CE

Mr. Ken Webster thanked the OECD for the invitation, and started his presentation by emphasising that individual perceptions ultimately depend on worldviews, a helpful consideration to keep in mind when designing circular economy systems. The main shift in perception required for the shift to a circular economy relates to its inspiration from living systems. To reinforce this idea, Mr. Webster shared the example of cradle-to-cradle specialists talking about nutrients rather than material, or food rather than waste.

Moreover, Mr. Webster emphasised the importance of effective, as well as efficient systems. Indeed, effectiveness relates to the system's purpose, which efficiency should support. To reinforce this point, Mr. Webster quoted Gunter Pauli, who said that "our current obsession with lowering costs is a misdirection: the purpose of the systems is to add value with what is locally available."

Gunter Pauli: "Our current obsession with lowering costs is a misdirection: the purpose of the systems is to add value with what is locally available."

Ecosystems are always an interplay between efficiency and resilience, making them flexible, adaptable and capable of evolution. The end goal sought should be the achievement of effective circular economy systems, not efficiency. As an analogy, Mr. Webster highlighted that economic thinking tends to focus on the structure of a tree (e.g. the trunk of the tree or the main roots and branches) rather than on the action occurring at the surface (e.g. in the finer roots and the twigs and leaves). However, functionally, the main structures can be seen to support the periphery, rather than the other way around.

Mr. Webster highlighted two main enabling conditions of the circular economy:

- First, the **infrastructure** of energy, water, places, workspaces, tools and means of exchange is a way of supporting less capital-intensive and competitive entities requiring support, such as temporary material stores, community kitchens, hacker and fab labs, platform cooperatives or local currencies. These entities help to increase participation in the economy at a very low cost using local resources.
- Second, the **macro** level, i.e. spending and taxing, also needs to be adjusted. Currently, the economy is not conducive to the systemic approach required for circularity, as macro flows of expenditure and income need to be deliberately orientated for circularity and exchange. These flows are currently orientated towards asset values and non-productive assets, yet business needs customers and customers need income: in fact, Adam Smith and other classic economists identified rent-seeking as the main obstacle to circulation. Nowadays, the rent-seekers are identified as the monopolies and oligopolies, rather than the landlords. To encourage people to be part of the circular economy, people should be taxed less than non-renewables and non-productive assets. Taxing the latter more would encourage circulation, production and exchange, rather than favouring an asset-based economy. These types of economic ideas are increasingly coming into the mainstream, with examples including job guarantees, basic dividends and infrastructure

spending. Most importantly, thriving economies that use local resources could limit populism, defend and rework democracy.

Mr. Ken Webster concluded his intervention by shedding light on the emergence of two circular economy concepts – centralised and distributive circularity – and the need for both approaches. Currently, the shift towards centralised circularity, which is top-down, in-house, based on proprietary intellectual property, and seeking to control materials or platforms for exchange, is increasingly becoming the norm. On the other hand, distributive circularity based on insights from living systems is about open standards, open source, open data, distributed R&D, global design and local manufacturing, and knowledge commons where people can participate more in the economy. Both types of systems are equally as important as each other.

Spotlight on the Circular Economy in Glasgow, United Kingdom

Mr. Ander Eizaguirre, Junior Policy Analyst, Circular Economy Programme, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD provided an overview of the preliminary findings of the ongoing policy dialogue with the city of Glasgow (UK), one of the case studies of the [OECD Programme on the Circular Economy in Cities and Regions](#), and highlighted the city's commitment to the transition towards a circular economy as a means of improving environmental and social outcomes.

Glasgow is moving towards a circular economy for three main reasons:

- The expected population growth in the city, combined with changes in the structure of households, will require new infrastructure and heightened demand for services. To accommodate this growing population, Glasgow City Council set the target of building 25 000 new houses between 2015 and 2025.
- [Glasgow aims to become the first carbon-neutral city in the UK by 2030](#). The city's GHG emissions dropped 37% in 2018 from 2006 levels, and Glasgow was the first Scottish city to introduce a Low Emissions Zone in the city centre.
- The circular economy is perceived as an opportunity to regenerate polluted land and improve health conditions. As a consequence of Glasgow's industrial legacy, 55% of the population lives within 500 metres of a derelict site, double the national share for Scotland. This issue is of particular importance as the adverse physical environment has been identified as one of the major explanatory factors of excess mortality in Scotland.

“Glasgow is moving towards a circular economy for three main reasons: to accommodate a growing population with changes in the structure of households; to become the UK's first carbon-neutral city by 2030; and to regenerate polluted and derelict land, as well as to improve health conditions.”

Glasgow has taken several steps towards the circular economy, and the concept of circularity is not new to the city:

- Glasgow's circular path is a shared responsibility, primarily driven by the collaboration between [Glasgow Chamber of Commerce](#), [Zero Waste Scotland](#) and [Glasgow City Council](#).
- Since 2015, this partnership has implemented several activities, including exploratory studies to track inflows and outflows of materials in the city and calculate consumer footprints; the organisation of events on the circular economy to raise awareness; and the organisation and creation of workshops and circular economy platforms to crowdsource ideas.
- In 2020, Glasgow launched its [Circular Economy Route Map](#), which emphasises the goal of localising the economy via the creation of local jobs and the promotion of community empowerment.

- Glasgow will host the [UN Climate Change Conference \(COP26\)](#) in November 2021, an opportunity for the city to showcase its transformation towards carbon neutrality and to create a legacy beyond the conference.

As a result of the work carried out for over a year with more than 60 stakeholders across the city towards the circular transition, the OECD's preliminary findings show that improvements can be made in several areas:

- There is a need to move from silo to system thinking within municipal departments, with several plans and strategies (e.g. Glasgow's City Development Plan, the city's Waste Policy for 2020 to 2030) having the potential to be connected with the circular economy, enhancing coordination across municipal departments.
- Glasgow needs to improve citizen awareness and understanding of the circular economy, while involving larger corporations in the circular transition, beyond the engagement efforts made with SMEs.
- The city needs to build technical capacities on the circular economy, and to collect and analyse data that could improve decision-making regarding circular economy-related initiatives.
- The city should implement financial incentives to promote the adoption of a circular approach, while facilitating access to funding for social enterprises that pursue social and environmental functions.
- Finally, the city can improve its existing public procurement process, which does not currently fully exploit the potential of the circular economy.

Mr. Ander Eizaguirre concluded his presentation with suggested policy recommendations to be further articulated and discussed with stakeholders during a dedicated Policy Seminar. The city of Glasgow could play a role as promoter, facilitator and enabler of the circular economy:

- To **promote** the circular economy, it is important i) to establish clear roles and responsibilities within the city council regarding policy-making and implementation; ii) to consider the progressive, long-term transition to circularity of key economic sectors (e.g. events, hospitality, the built environment and food); and iii) promote the use of labels and certifications to increase trust, including ensuring that existing certifications such as the Revolve certification for second-hand products effectively reach customers.
- To **facilitate** collaboration among a wide range of actors to make the circular economy happen in Glasgow, the city can i) effectively coordinate across levels of government to align policies, targets, funds and regulation, especially considering the [Scottish government's circular economy strategy](#) launched in 2016; ii) use empty or dismissed buildings as a testbed for circular economy experimentation; and iii) city could set up initiatives for young people in social and environmental projects.
- To **enable** the governance and economic conditions conducive to the circular economy, Glasgow could i) identify and update local regulations; ii) use economic instruments to accelerate the transition, while promoting capacity building in the city government; iii) set up an incubator policy for circular business models, beyond existing incubators and business support programmes in Glasgow; and iv) create an information system and assess results.

Panel discussion

Ms. Anna Richardson, Councillor for Sustainability and Carbon Reduction, City of Glasgow, United Kingdom, thanked the OECD for the presentation and the insightful work in supporting Glasgow on its circular journey. Ms. Richardson reaffirmed Glasgow's commitment to taking an approach to circularity that embeds social justice and sustainability, offering opportunities to citizens and communities to build more resilient local economies, to share and repair more, and to limit resource waste. By making circular

activities part of everyday life, Glasgow aims to demonstrate how climate action can be beneficial for living standards.

“By making circular activities part of everyday life, Glasgow aims to demonstrate how climate action can be beneficial for living standards.”

New ways of working have the potential to create space in the city for new local businesses and third sector organisations. Professor Webster’s comments about supporting local economies resonated with what Glasgow strives to achieve. Successful examples in Glasgow include organisations that upcycle bicycles, others that lend tools and provide training to enable residents to do work in their homes, which can improve energy efficiency, and repair facilities that enable the repair and reuse of everyday items. Such examples are win-win scenarios as they enable citizens to make the most of existing resources, while reducing pressure on the council to dispose of unwanted items. Indeed, the significant financial and carbon cost of waste management make it in the city’s best interests to reduce the quantity of waste produced.

The [Circular Economy Route Map](#) highlights the work that Glasgow plans to take forward to turn principles into reality, and focuses on key high-impact areas, such as:

- Projects to redistribute surplus food, such as through community fridge models. In addition to food, surplus technology from mobile phones to laptops is being repurposed for those who are currently digitally excluded. The importance of access to food and digital technology was further highlighted by the COVID-19 pandemic.
- The city’s new textile forum works on reducing textile wastage. Facilitating these networks and bringing people together is an area in which Glasgow City Council can add value.
- Construction is a significant challenge to achieve circularity. As such, the city will support the circular design of new buildings, as well as harvesting and storing materials for reuse.
- The council will show leadership for the city by developing procurement processes that support the businesses taking steps in the right direction. The OECD report highlights that role modelling from organisations such as councils is essential, so circular practices must become a part of business as usual.
- Finally, the resolve to build better places must be strengthened. Strong communities, with networks and enterprise capable of sustaining neighbourhoods, endured COVID-19 lockdowns more robustly. Those same networks must enable Glasgow to take climate action that supports people.

Ms. Richardson concluded her intervention by expressing the wish that Glasgow’s COP26 legacy would be one of communities feeling empowered to lead much of the change towards a healthier, decarbonised future. The circular economy requires technology and manufacturing changes, but it equally needs people. The people and businesses at the root of circular initiatives enable access to better quality of life within their communities, while reducing their environmental impact. COP26 will be an unprecedented opportunity to highlight the benefits of the circular economy for people.

Ms. Burcu Tuncer, Head of Circular Development, ICLEI, started her intervention by putting forward circular development as one of the pathways towards the achievement of Sustainable Development Goal (SDG) 12 on responsible production and consumption, and SDG 13 on climate action, at the local level. The absence of global binding targets for local governments on material or resource use implies that agendas are shaped by other environmental issues such as climate neutrality and biodiversity protection, as well as local socio-economic agendas. However, action on the circular economy provides opportunities to reach climate neutrality, biodiversity and local economic development goals in urban environments.

Until recently, the majority of climate-related policy discussions and investments have focused on accelerating the adoption of renewable energy and energy efficiency. However, these do not effectively tackle most of the emissions resulting from industry, land use and built environment change. Despite global efforts, GHG emissions are not falling rapidly enough to achieve climate targets: switching to renewable

energy can only reduce emissions by 55% and fails to address emissions embedded in the materials and products flowing within the economy. The remaining 45% of GHG emissions embedded in the production of everyday products can, however, be addressed by the circular economy. The International Resource Panel (2019) estimates that around 50% of total GHG emissions are caused by resource extraction and processing. The ICLEI Network is unanimous that more effective action is needed.

“The switch to renewable energy can only reduce GHG emissions by 55% and fails to address the remaining 45% of emissions embedded in the materials and products flowing within the economy. These emissions can, however, be addressed by the circular economy.”

To this end, ICLEI network members are taking action. For example, the city of [Turku](#) (Finland), the Mayor of which is ICLEI Vice-President and lead of the circular development pathway of ICLEI’s network of over 2 500 cities and local governments, has a climate plan that commits the city to become climate neutral by 2029. To do so, Turku will strive to reduce GHG emissions by 80% compared to 1990 level by 2029. From 2029 onwards, Turku aims to become a climate-positive area with net negative emissions, meaning that its carbon compensation will exceed its emissions. The mitigation measures of Turku’s Climate Plan 2029 are directly linked to circularity measures: for example, two heat pumps use the city and neighbouring municipalities’ wastewater heat to produce district heating and cooling for 15 000 households. In addition, sludge from the plant is used for biogas production, serving local electricity, heating and transport needs through a carbon-neutral source. These wastewater activities produce ten times more energy than they consume. In addition, Turku City Group subsidiaries such as Turku Science Park Ltd. are obliged to account for the lifecycle climate and environmental impacts of their investments. Regenerative solutions are also key to protecting carbon sinks in Turku. By increasing the number of green areas, maintaining forests, fields and the amount of vegetation in various areas of the city, the city increases the carbon absorption capacity of vegetation and soil. [ICLEI has been supporting the identification of circular economy interventions](#) across five priority sectors (food, water, buildings and construction, energy, transport and logistics) through multi-stakeholder engagement and international knowledge transfer. Turku is one of the signatories of the [European Circular Cities Declaration](#).

[ICLEI’s Action Framework for the Circular City](#) enables cities to systematically analyse what actions can be taken for the transition to a circular and carbon neutral economy in cities. Currently, 18 pilot cities in are using this Framework to design circular economy interventions for climate mitigation. This systemic approach enables cities to see potential for the circular economy beyond effective waste management. The Framework includes five main strategies:

- **Rethink** concerns value chains and the phasing out of linear incentives to mitigate carbon emissions. For example, the [Hammarby](#) district (Sweden) is designed around the closed-loop metabolism concept that embraces synergies between water, energy, and transportation. The district is heated by purified waste water, combustion of household waste and biofuel; once heat has been extracted from waste water, it is used for cooling. Biogas is used to run local transit.
- **Regenerate** is about ensuring all infrastructure and production-consumption systems positively contribute to local resource and nutrient cycles and respect ecosystems’ regeneration rates. For example, [Bogor](#) (Indonesia) processes organic waste using the black soldier fly. Fly larvae eat organic waste, thus reduce the amount landfilled and avoid carbon emissions. Residue from the process can be used as fertiliser; and fly eggs and larvae can be monetised as animal feed.
- **Reuse** seeks to extend the use of existing resources, products, and infrastructure. [Belo Horizonte](#)’s (Brazil) Computer Reconditioning Centre enables citizens from low-income communities to receive training to restore donated used IT equipment into full working condition. This refurbished equipment supports more than 300 "digital inclusion sites" operated by the city, where residents have free access to computers and internet, as well as training opportunities in basic digital literacy.
- **Reduce** aims to optimise infrastructure for resource efficiency. For example, [Toronto](#) (Canada) saves energy by using the naturally cold waters from Lake Ontario to cool its central financial

district. It also promotes circular business innovations such as [Rizhao's](#) (China) Economic and Technology Development Area (REDA), an eco-industrial park that demonstrates the principles of industrial symbiosis.

- **Recover** strives to enable the recovery of materials at their end of life and to facilitate their reintroduction in production processes. Under the Green Cincinnati plan, the city committed to reduce [food waste](#) with consumer campaigns and targeted food recovery networks, which collect food that would otherwise be wasted and distribute it to residents facing food insecurity. The city estimates that food waste composting already reduces carbon emissions by 18 500 tonnes per year.

Ms. Burcu Tuncer concluded her intervention by highlighting the Climate Action Pathways process. ICLEI co-heads the [Human Settlements Climate Action Pathway](#), the space in the climate negotiations for addressing waste, consumption and circularity, with the United Nations Environment Programme (UNEP). This is a window of opportunity to push for zero waste, accessibility and more participatory processes in cities. The list of ambitious actions for various actors, from business to local governments, will stay open for endorsements towards COP26.

Ms. Patrícia Iglecias, President of the Environmental Company of the State of São Paulo (CETESB), Brazil, started her intervention by providing an overview of the state of São Paulo's characteristics and implications for the circular economy. As the most industrialised state of Brazil and one of the most populous, with more than 44 million people, environmental legislation in São Paulo is more restrictive than national environmental legislation, particularly regarding the prevention of pollution. On the other hand, investors recognise that Environmental, Social, and Corporate Governance (ESG) data can influence business performance, corporate strategy and risk management in the long term. Many ESG factors are linked to the circular economy, including waste management and destination, reverse logistics, product responsibility, life cycle analysis, GHG emissions, water shortages, and the recognition of the fact that resources are finite.

The state of São Paulo has implemented policy instruments that push the state economy towards a more circular economy, which in turn contributes to climate neutrality. Notably:

- The state has a robust licensing process, which is essential for ensuring pollution control and promoting the resilience of biological cycles.
- The state has implemented a Reverse Logistics policy, similar to the European Union's Extended Producer Responsibility, since 2018. This policy mandates proof of compliance with reverse logistics in environmental licensing procedures from industries, importers, retailers and distributors of products for which implementing an EPR system is mandatory by federal and state legislation. The number of companies covered by the policy has increased from 2 000 in 2018, to 4 000 in 2021.
- In 2020, CETESB led the elaboration of a new regulation on organic waste composting to facilitate the implementation of small-scale composting projects for household organic waste. It is estimated that up to 500 kg per day can be facilitated by a simple license system.

Over time, the licensing process aims to encourage the adoption of technologies that are less aggressive for the environment and more efficient in the production process. A good example comes from ethanol from sugarcane, the biofuel with the lowest carbon footprint in the world (90% lower GHG emissions than gasoline). Today, the state's Greener Ethanol Protocol focuses on improving good practices in soil conservation, reducing both use of agricultural supplies and water.

“Local and regional governments have an important role to play in achieving the temperature targets of the Paris Agreement, particularly in federal countries such as Brazil.”

Ms. Patrícia Iglecias concluded her intervention by highlighting the important role of local and regional governments in achieving the Paris Agreement targets, particularly in federal countries such as Brazil, in collaborating with businesses on the ground for the circular economy. The federal level of government can help by providing a framework and methodology.

Mr. James Pennington, Lead, Circular Economy, World Economic Forum (WEF), highlighted the importance of linking the green and circular agendas. Many vital transitions are set to take place within cities, particularly in the built environment, a key area for decarbonisation.

The WEF launched a [new website](#) that looks into topics at the intersection of decarbonisation and the circular economy. One of these topics is industry, a very hard-to-abate sector with an unclear decarbonisation pathway. 27% of global GHG emissions come from industry, of which 60% come from the use of four materials: cement, steel, aluminium and a broader array of chemicals. The OECD estimates that global material use will double by 2060: as such, if decarbonisation occurs at a slower pace than that of the increase in material use, industry emissions could continue to grow, highlighting the need to introduce the circular economy into hard-to-abate sectors. For instance, 30% of emissions reductions for steel will come from circular economy.

27% of global GHG emissions come from industry, of which 60% come from the use of four materials: cement, steel, aluminium and a broader array of chemicals. The OECD estimates that global material use will double by 2060, meaning that decarbonisation efforts could be undone by this rate of increase.

Almost half of these materials go into the built environment, which accounts for 36% of European waste. With demand for real estate rising fast, building stock will need to double by 2050 globally, with strong regional differences: Europe's building stock will grow by 20%, while 66% of the built environment in Africa has not been built yet. In most developing countries, a large share of the infrastructure that will be in use in 2050 has not been built yet. This represents both an important challenge and an opportunity for the circular economy.

Key circular economy solutions in the built environment include the replacement of building materials with circular alternatives, increasing building utilisation (including repurposing and extending the life of existing buildings), and recycling and reusing (e.g. using recycled materials for new buildings and modular designs that facilitate the replacement of pieces of buildings).

Mr. Pennington highlighted two relevant pieces of recent work from the World Economic Forum:

- A recent report on [Five Big Bets for the Circular Economy in Africa](#), published by the African Circular Economy Alliance, for which the WEF hosts the Secretariat co-chaired by Rwanda, South Africa and Nigeria.
- A WEF [partnership](#) with the government of the Netherlands, the Ministry of the Environment of Japan and several companies calling for the circular economy in the net zero industry transition. The first key focus of this initiative will be on the built environment.

Mr. Pennington highlighted the work of the Ellen MacArthur Foundation and other organisations working with the [Platform for Accelerating the Circular Economy \(PACE\)](#) in advancing towards the inclusion of circular economy principles within the built environment. In this regard, continued work among key stakeholders, especially cities, is essential to ensure this item stays on the political agenda.

Mr. Pennington concluded his intervention by highlighting the lack of countries mentioning the circular economy within their Nationally Determined Contributions (NDCs) for the Paris Agreement. This underscores the need for heightened communication between cities and national policy makers regarding how cities are lowering their GHG emissions through circular economy and how this contributes to national NDCs.

2 From global to local: closing loops in green recovery plans and measuring progress in cities and regions

Closing loops in the green recovery

→ [Click here to see the video recording.](#)

Ms. Aziza Akhmouch, Head of Division, Cities, Urban Policies and Sustainable Development, OECD introduced the keynote speaker (Ms. Rozalina Petrova), the OECD speaker (Mr. Andrea Accorigi) the four panellists (Mr. Philip Nugent, Mr. Mihail Kőlvart, Ms. Laura d'Aprile and Ms. Brigitte Mouligneau) and moderated the panel discussion on closing loops in the green recovery.

Keynote speech by Ms. Rozalina Petrova, Member of the Cabinet of the EU Commissioner for Environment, Oceans and Fisheries, Virginijus Sinkevičius

Ms. Rozalina Petrova, Member of the Cabinet of the EU Commissioner for Environment, Oceans and Fisheries, Virginijus Sinkevičius, congratulated the OECD on organising the Roundtable and expressed thanks for the invitation. She started her intervention by warning that despite the health, social, economic and political challenges of the COVID-19 crisis, wider climate, environmental and social challenges related to globalisation and digitalisation should not be overlooked. These challenges are particularly tangible for cities, and many solutions are to be found at the city level. As such, cities have a key role to play in bringing these important but sometimes abstract agenda to the ground, and ensuring that digitalisation and decarbonisation are positive for all citizens.

“Despite the health, social, economic and political challenges of the COVID-19 crisis, wider climate, environmental and social challenges related to the megatrends of globalisation and digitalisation must not be overlooked. These challenges are particularly tangible for cities and many solutions are to be found at the city level.”

The European Commission (EC) has two key roles in meeting this challenge: to provide a level international playing field and to adjust regulatory systems to be fit for the sustainable future, and to provide incentives with EU funds. Notably, the [EU recovery plan](#) and [Recovery and Resilience Facility](#) represent unprecedented funding and stimulus opportunities. The EC is working closely with member states to ensure the investment and reform sections of the recovery and resilience plan they are mandated to present are fit for purpose.

Beyond regulation and incentives, consistent strategies are needed to support the EU's sustainable growth, starting with the [European Green Deal](#) (EGD). The EGD encompasses many economic sectors, including mobility, agriculture and construction. The [new circular economy action plan](#) (March 2020), one of the key deliverables of the EGD, received very positive feedback from all stakeholders despite COVID-19: companies saw business opportunities; citizens saw the right to repair and material security; and the EGD was positively perceived by EU institutions and other international institutions. On the regulation side, as part of the EGD, the EC delivered a legislative proposal on batteries covering the full life cycle of products in 2020. In 2021, the EC will expand circular economy principles to a broader scope of products and areas such as packaging and waste shipment.

On the funding side, European funds are also key to ensuring the shift towards a more resilient and sustainable pathway. As part of recovery efforts, green and digital solutions are key, with very specific targets and commitments in these areas. In fact, the intersection between going green and digital is vital because of the number of opportunities it presents. At the city level, these opportunities include smart metering, smart grid organisation, better urban spaces, and digitally supported sharing models.

However, challenges and opportunities at the city level have changed due to the COVID-19 pandemic. For instance, the crisis highlighted the need for more green and open spaces, and more opportunities for interaction among local stakeholders. A change in the urban landscape has also been observed, with some areas (e.g. business districts) being more abandoned than others.

The circular economy has an important role in addressing these new needs. Circular economy possibilities at the local level are very important, including recycling, the separate collection of waste, composting and waste prevention schemes. There are also many opportunities for sharing and digital models. Investments at the local level for the circular economy can have the highest social benefits. Economic actors will make some of these investments regardless, so public investment needs to look towards those investments that may not be immediately made by economic operators, but that can bring the highest value in terms of job creation and sustainable work. A good example of this is environmental infrastructure, including for water reuse. Regulatory and financial incentives are key to kick-start these models that can make local communities more resilient socially, economically, and more sustainable environmentally.

Spotlight on the Circular Economy in Ireland

Mr. Andrea Accorigi, Policy Analyst in the Circular Economy Programme of the Centre for SMEs, Entrepreneurship, Regions and Cities (CFE), OECD, presented preliminary observations on the OECD case study on the Circular Economy in Ireland. The policy dialogue started in 2020 and will continue throughout 2021, in cooperation with the Irish Department of the Environment, Climate and Communications (DECC) and based on interviews with over 70 stakeholders. The presentation provided an overview of three key points: why Ireland is moving towards a circular economy; what steps have been taken so far; and the OECD's preliminary policy recommendations.

Mr. Accorigi presented the three main reasons for Ireland's shift towards a circular economy:

- **Climate:** Ireland committed to carbon neutrality by 2050, but is not on track to achieving its 2030 GHG emission reduction targets. The [OECD Global Material Resources Outlook to 2060](#) estimates that more than two-thirds of GHG emissions will be related to materials management by 2060. For Ireland, the circular economy has a key role to play in reducing GHG emissions from material management activities and achieving its 2050 target.
- **Waste and resources management:** Ireland's circularity rate, which measures the share of materials recovered and reintroduced into the economy, is below the EU average: 1.6% vs 11.9%. The circular economy can help improve Ireland's circularity rate by preventing waste generation and making efficient use of natural resources. This is particularly relevant considering that waste

generation per capita has increased over the past decade in Ireland, while the recycling rate has not increased at the same pace.

- **Bioeconomy:** one-third of Ireland's GHG emissions come from agriculture, and around 60% of the population and 90% of the territory is predominantly rural. A circular bioeconomy could not only support GHG emission reductions, but also create more jobs in rural areas where farmers can increase their income by producing bio-based products from agricultural residues and selling local food production to city dwellers. It also has the potential to enhance links between urban and rural areas: bio-waste produced in urban areas can be transformed into compost, fertiliser and eventually food that can be sold in the city.

Ireland has taken progressive steps towards the circular economy:

- Ireland's circular economy journey started in the waste sector, with the Environmental Protection Agency's [National Waste Prevention Programme](#) (2004), which focuses on waste prevention and circular economy in waste.
- Sub-national levels of government are also involved in the circular economy transition in Ireland, as illustrated by the each of the three waste management regions' [Regional Waste Management Plans](#).
- Both the [National Policy Statement on the Bioeconomy](#) (2018) and the [Climate Action Plan](#) (2019) mention the circular economy as concrete contributions to achieving sustainability and GHG emission reduction targets. Ireland introduced a new [Waste Action Plan for a Circular Economy](#) in 2020.
- In 2021, Ireland started focusing on a holistic and systemic circular economy strategy for the country, moving from a waste-focused circular economy to a wider, multi-sectoral approach. Key legislation and policy documents to be made public include the Circular Economy Bill, the Whole of Government Circular Economy Strategy, the EPA's Circular Economy Programme, and the National Waste Management Plan for a Circular Economy, which will replace regional waste management plans by the end of 2021.

The OECD's preliminary policy recommendations analyse how Ireland can act as a promoter, facilitator and enabler of the circular economy in the country, based on the identification of governance gaps.

Ireland needs to shift from a waste-based circular economy to a wider holistic vision, from waste to resource management. To do so, regulatory (e.g. waste criteria and by-products) and financial frameworks (e.g. to reduce risk for investing in circular economy projects) are needed; incentives for behavioral change need to be reviewed; awareness of the circular economy should be raised among citizens, farmers and SMEs; and capacity to start and scale up circular economy business models should be built.

Ireland's new circular economy strategy represents a key opportunity for the country to: i) **promote** a holistic, systemic approach to the circular economy, moving beyond waste; ii) **facilitate** the coordination of multi-level governance of the circular economy, in cooperation with waste management regions and local authorities; and iii) **enable** the circular economy via a conducive regulation, financial frameworks, and an efficient monitoring system.

"Ireland's new circular economy strategy is a great opportunity for the country to promote a holistic, systemic approach to the circular economy, moving beyond waste."

Panel discussion

Mr. Philip Nugent, Assistant Secretary of Natural Resources and Waste Policy at the Department of the Environment, Climate and Communications (DECC), Ireland, started his intervention by emphasising the absence of conflict between the circular economy transition and the response to COVID-19: indeed, the pandemic response further reinforced the role of the circular economy. After the introduction

of restrictions, immediate challenges arose from significant increases in plastic waste due to Personal Protective Equipment (PPE), the reticence of food outlets to accept reusable packaging, and the rise of household waste. However, opportunities also emerged: remote working reduced transport emissions, supply chains were shortened, and consumers went local.

The circular economy can also be an opportunity to provide solutions to the vulnerabilities in global supply chains: for example, by making products more repairable, reusable, and potentially remanufacturable; by driving self-sufficiency and local rather than global production and consumption; by creating shorter and more resilient supply chains guided by scarcity and necessity; by creating local sustainable jobs, training and enterprise opportunities; and by using local resources and providing local repair and refurbishment schemes.

Mr. Nugent emphasised that although Ireland had started developing a waste action plan before the pandemic, COVID-19 provided an opportunity to accelerate work on waste, one of the components of the circular economy. Moving from in-person to weekly virtual meetings allowed stakeholders to deep-dive into topics to be covered in the waste action plan. For Ireland, the COVID-19 constitutes a reason to accelerate the circular economy transition, not to delay it.

“For Ireland, COVID-19 is a reason to accelerate the circular economy transition, not to delay it.”

To ensure a fair and just transition to the circular economy, policies and regulatory tools must allow urban and rural dwellers and different social categories to be targeted fairly. For example, the decision of one of Ireland’s largest peat-extracting semi-state companies to step back from the peat business had significant impacts on employment and secondary markets, notably horticultural peat. This example highlights that certain beneficial actions for climate and the circular economy can have direct and negative consequences on local communities. As such, one of the priority projects of Ireland’s [Recovery and Resilience Plan](#) concerns restoration and rehabilitation, as part of a just transition.

Finally, Mr. Nugent highlighted the role of local authorities as engines for the transition, given their direct responsibility in waste management, housing, planning, transport, and other sectors relevant to the circular economy. The role of DECC is to set the overall strategy and policy framework for local authorities.

“The transition to the circular economy is a national, regional and local issue. The DECC’s primary task is to set the overall strategy, policy and legislative framework, but local and regional authorities will be the engine room of the circular economy transition as they have direct responsibility for the regulatory tools for waste, housing, planning and transport, among others.”

Mr. Mihail Kõlvart, Mayor of the City of Tallinn, Estonia, said the COVID-19 crisis was harder to foresee than the climate crisis, making it easier – in theory – to prevent. Regarding the transition towards the circular economy, the questions of *how* and *when* are now more relevant than *why*. Reducing consumption, recycling waste, and reorganising production are all essential to reach climate goals. As such, circular economy principles should be a core part of development strategies in cities.

“In Tallinn’s transition to the circular economy, the question is not why, but how and when.”

The SDGs and the European Green Deal are key drivers of Tallinn’s strategic development. The city has joined the [EU Covenant of Mayors](#) and the [EU Green City Accord](#). In December 2020, Tallinn City Council adopted the [Development Strategy Towards 2035](#), including basic values from all global initiatives and circular economy principles. The city is planning to develop a holistic roadmap for the economic transition from a linear to a circular economy.

By joining the [OECD Programme on the Circular Economy in Cities and Regions](#), the city of Tallinn aims to advance towards the achievement of these goals as by mapping existing challenges, exploring possibilities, and finding relevant local solutions. Moreover, the exchange of information and experience at the international level is key in this process.

To develop a circular culture in cities, a change of mindset is required as a first step. Local authorities should act as role models for citizens and businesses, while providing concrete incentives for the private sector. In the case of Tallinn, cooperation across all levels of government and stakeholders, including universities and start-ups, is crucial to make Tallinn an example for the rest of the country. Mr. Kõlvart highlighted the essential role of science and innovation in the circular economy transition.

Ms. Laura D'Aprile, Director General at the Directorate-General for the Circular Economy of the Ministry of Ecological Transition, Italy, underscored the challenge of presenting a COVID-19 recovery plan while presiding the G20 with the support of the OECD, other organisations and G20 countries. Starting from the basis that the circular economy start with citizens, the [Italian National Recovery and Resilience Plan \(NRRP\)](#) focuses on cities and citizens, in order to:

- Improve the construction and development of waste treatment plants to achieve EU objectives for waste recovery.
- Advance towards technology treatment plants, focusing on plastics, textiles, paper and paperboard, in line with the country's strong recycling tradition for paper and paperboard.
- Define an integrated monitoring system for the prevention of illegal waste disposal, a major issue in Italy.
- Put in place measures for circularity in agri-food supply chains to improve the local production and treatment of agri-food resources.

“Governments must support regions and cities that want to accelerate the circular transition, but they must also support slower-moving regions and cities in catching up with fast movers.”

The Italian government will provide technical support to cities and regions in order to meet the challenging objectives set out by the national recovery plan. One of the major issues of Italian environmental strategies is to bridge regional divides: on one hand, support must be provided to cities wishing to go faster; on the other hand, slower-moving cities must also be supported to attain the level reached by others. Italy's view of the just transition builds on two pillars: young generations and the digitalisation of processes to allow wider citizen participation. The task of the government is to bridge these gaps via national regulation. Ms. d'Aprile concluded her intervention by stating that the Italian government supports the role of universities for the development of new circular technologies with national programmes.

Ms. Brigitte Mouligneau, Transition Manager at Circular Economy at Circular Flanders, Belgium, highlighted the need for Circular Flanders to scale up and focus on overcoming barriers to the circular economy, after having worked significantly on raising awareness, experimenting and sharing over the past few years. During the pandemic, inquiries carried out by Circular Flanders found that companies with a higher level of circularity faced significantly fewer challenges than their linear counterparts did. The latter faced financial and supply chain-related problems, while the former's flexibility, innovation and close collaboration with supply chain partners made it easier to navigate the crisis.

“Circular Flanders' findings showed that companies with more circular business models faced fewer financial and supply chain-related challenges during the COVID-19 crisis than companies with linear business models.”

These findings highlighted that circular strategies were needed in the recovery. As such, Circular Flanders has a full new COVID-19 strategy. The Programme of work of Circular Flanders will focus on six strategic topics involving several partners in the coming years: circular construction, chemicals and plastics, water, food chain, bioeconomy and manufacturing industry. Furthermore, the education system at large is crucial to prepare citizens for the transition, as the transition to a circular economy requires new jobs and skills.

Circular cities and regions: how to measure progress

→ [Click here to see the video recording.](#)

Mr. Stefano Marta, Coordinator, Territorial Approach to the SDGs, CFE, OECD, introduced the keynote speaker (Mr. Janez Potočnik), the OECD speakers (Ms. Oriana Romano and Mr. Peter Börkey), the three panellists (Ms. Josée Chiasson, Ms. Naomi Clarke and Mr. Jarkko Havas), and moderated the panel discussion on the measurement of the circular economy in cities and regions.

Keynote speech by Mr. Janez Potočnik, Co-Chair of the UNEP International Resource Panel, former European Commissioner for Environment

Mr. Janez Potočnik provided an overview of key aspects to consider when measuring the circular economy. First, cities and regions are of key relevance due to their high autonomy of the governance *vis-à-vis* national governments and their closeness to citizens. Many transitional problems and opportunities are concentrated in cities. Second, natural resources should be the centre of attention as they provide the foundation for the goods, services and infrastructure that make up current socio-economic systems. These materials encompass biomass, metals, fossil fuels, non-metallic minerals, water and land.

The challenge resides in the significant environmental and health problems caused by resource extraction and processing, which are responsible for 90% of global biodiversity loss and water stress, 50% of global climate change impacts and one-third of air pollution health impacts. If current trends continue, global material consumption is predicted to double by 2060. Global resource use has more than tripled since 1970, and global material demand per capita has almost doubled (from 7.4 tons in 1970 to 12.2 tons per capita in 2017), implying that much of this demand could be connected to economic development rather than population growth. In addition, material productivity (material use per unit of GDP), which was growing globally, started to decline in the early 2000s and has stagnated in recent years. This is notably due to the shift in production from resource-efficient countries such as Japan and the US to less resource-efficient countries such as China, India and Indonesia.

“Resource extraction and processing is responsible for 90% of global biodiversity loss and water stress, 50% of global climate change impacts and one-third of air pollution health impacts.”

As such, the goal is to increase material productivity. Well-being, development and economic activity growth should be decoupled from the growth of resource use and environmental impacts, and be measured in a systemic way to become a core part of the solution. To do so, a shift from a GDP-driven model with product maximisation, towards a model providing for human needs and productivity improvements at scale is needed. This implies that society needs mobility rather than cars; lights rather than light bulbs; and music rather than CDs. Consequently, there is a need for dematerialisation, rethinking ownership, and shifting from efficiency to sufficiency, as part of the “Circular economy 2.0”.

The Circular Economy 2.0 must go beyond repair and recycling to stay within planetary boundaries, and so must its measurement. For example, the [IRP’s Resource Efficiency and Climate Change report](#) (2020) found that GHG savings from more intensive floor space use are significantly higher than those from repair, reuse and recycling in G7 countries.

Regarding measurement, the circular economy should be considered as an instrument to achieve the decoupling of economic growth from resource use and environmental impacts, and considered as part of the bigger economic, societal, and cultural transformation required to deliver the SDGs. As such, consistent circular metrics must feed into the bigger picture and contribute to its improvement. The end goal is to improve wellbeing within planetary boundaries; the pathway is the circular economy; the potential metrics are the tools.

“The goal is to improve wellbeing within planetary boundaries; the pathway is the circular economy; the potential metrics are the tools.”

On one hand, wellbeing metrics relating to health, education, safety, income, equality, community and so on are needed nationally or even globally. Planetary boundary metrics could comprise GHG footprints, biodiversity footprints, pollution footprints, water footprints, etc. On the other hand, circular economy metrics should rely on i) design and demand balance metrics (e.g. demand/need for mobility, demand for new houses per person; ii) utilisation and “wastefulness” metrics (e.g. utilisation of key assets such as housing, mobility); and iii) material (re)use metrics (e.g. lifetime of products, repair rates, reuse rates, recycling rates, and waste).

The support of major institutions such as the European Commission and the OECD in producing this data is the first building block for systemic change.

To conclude, Mr. Janez Potočnik brought forward two key reports showing the way forward on the circular economy for cities. First, the [OECD Synthesis Report on the Circular Economy in Cities and Regions](#) highlights the lack of a systemic approach towards circular economy indicators, as well as:

- The lack of an agreed definition of the circular economy.
- The absence of a harmonised measurement framework.
- A strong focus on waste but a lack of focus on closing loops.
- That existing indicators are often data-driven rather than objective-driven.

The second key report, the Resource Panel’s [The Weight of Cities](#) report, analyses the solutions that need to be monitored. A four-level framework to achieve resource efficiency was developed:

- Compact urban form.
- Livable, functionally, and socially-mixed blocks creating accessibility and conditions for walking and cycling rather than using motorised transport.
- Energy-efficient buildings and urban systems, including smarter, space-efficient, multi-unit houses.
- Resource-efficient consumption, including better recycling, repair, and reduced energy use.

To summarise, the measure of success should focus on integrated resource productivity.

Answering a question from the chat about utilisation with respect to productivity, Mr. Potočnik agreed that the utilisation (e.g. increasing the utilisation of cars, as well as replacing them with electric models) is an important part of the solution.

Answering a comment from the chat highlighting the similarities between using wellness metrics within planetary boundaries and the doughnut economy, Mr. Potočnik agreed that both concepts were similar, and underscored the need to shift away from a discussion on how to clean production towards one on fulfilling human needs, while reducing the use of natural resources. Organising the economy differently would require less “cleaning” of the environment.

The OECD Scoreboard on the Governance of the Circular Economy in cities and regions

Ms. Oriana Romano, Head of Unit, Water Governance and Circular Economy, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD, introduced her intervention by drawing attention the prevalence of environmental indicators in the measurement of the circular economy. The [OECD Programme on the Circular Economy in Cities and Regions](#) analysed circular economy indicators to better understand the progress made by different levels of government on their transition from linear to a circular economy. The objective was also to raise awareness and to build consensus on the definition of circular economy among stakeholders. The Programme analysed more than 400 existing indicators used as part of different circular economy strategies to understand what governments are measuring. The

majority of indicators relate to the environment (39%), followed by governance (34%), economics and business (14%), infrastructure and technology (8%) and societal indicators (5%).

Within the environmental indicators, waste indicators represent 20% of the inventory. Many circular economy strategies distinguish between categories of waste, and all indicators are different to one another. A total of 31% are considered as circular economy indicators, for example related to companies receiving assistance for their circular economy projects or city contracts related to circular economy principles. Many indicators are data-driven, rather than objective-driven, meaning that cities use available indicators to measure circular related aspects.

“The OECD Inventory of Circular Economy Indicators contains 474 indicators from different circular economy strategies. This inventory helped the OECD to understand how to best provide support to governments in their transition to the circular economy.”

The [OECD Inventory of Circular Economy Indicators](#) contains 474 indicators from different circular economy strategies. This inventory helped the OECD to understand how to best provide support to governments in their transition to the circular economy. The OECD has developed a [Checklist for Action and a Scoreboard](#) for governments to self-assess the existence and implementation of governance conditions able to accelerate the transition towards the circular economy. The Scoreboard relies on a traffic light system and follows three steps: i) to map stakeholders, ii) to discuss and agree on the score and iii) to define what works well and what needs to be improved. Following these steps supports a better understanding of the different roles of each stakeholders in the systemic change from a linear to a circular economy.

Panel discussion

Ms. Josée Chiasson, Director of Economic Development, City of Montreal, Canada, introduced her intervention by highlighting the consensus on the need for a green, inclusive and local recovery emerging from the health and social crisis created by the COVID-19 pandemic, and the role of the circular economy as a pathway to achieve this. As such, the recovery provides an opportunity to build momentum and take the discussions on the circular economy to the next level.

From the perspective of Montreal, five key drivers exist for the circular transition in the city:

First, strong political leadership is required. For instance, the leader of the City of Montreal aims to position the city as a circular economy leader in North America. Courage and power are required to make changes, implement new regulations and new ways of doing things, and experiment with trial and error.

“Strong alignment across various city plans is required for the circular economy transition in cities, including climate plans, waste management plans, sustainable procurement plans and economic recovery plans.”

Second, alignment across city plans is required. Circular economy should take a strategic place within City strategic plans such as [climate plans](#), [waste management plans](#), sustainable procurement plans and [economic recovery plans](#). In Montreal, the alignment of these different plans enables all city services to work together towards achieving the same goals. Alignment with other levels of government, as illustrated by [Montreal's joint metropolis economic plan with the government of Quebec](#), also helps to avoid working in silos and to maximise synergies and value creation.

Third, knowing and mobilising the ecosystem is key to transform the economy. The city acts as a federator and leader to mobilise and support Montreal's circular economy ecosystem. Montreal finances organisations specialised in the circular economy such as [Synergie Montréal](#) to support the transition of other businesses, and collaborates with different economic development organisations to organise

workshops with the business community in order to create awareness and mobilisation towards the transition.

Sustainable financing solutions are the fourth key driver. For instance, Montreal created a partnership with Fondation, a private investment fund, to set up the [first circular economy fund](#) in Canada with a capitalisation of CAD 30 million. This creates a leverage effect to accelerate business transformation with more appropriate financing terms. The city aims to create more partnerships with the private sector to invest in companies with a circular business models, as well as those with social and environmental impact.

Last but not least, Montreal believes that a common circular economy roadmap is needed, as the city's Economic Development Department drives the circular economy strategy. This is a strong signal that the business community is ready to accelerate the transition. Montreal's collaboration with the OECD and the Ministry of International Relations and Francophonie (*Ministère des relations internationales et de la Francophonie*) will enable the city to amplify its impact in the community by better understanding the city's ecosystem and prioritising action for greater economic, social and environmental impacts.

Ms. Naomi Clarke, Sustainability and Climate Change Officer, Dundee City Council, United Kingdom, Dundee highlighted the development of a circular economy strategy for the city as one of the key actions of [Dundee's Climate Action Plan](#) launched in December 2019. To date, Dundee has worked with around 50 businesses and organisations and has designed waste reduction principles. Several circular projects and activities exist at the city level, but there is no overarching strategy yet, and the city has not embedded the circular economy in activities such as procurement, waste, and transport.

“Using the OECD Scoreboard allowed the city of Dundee to gather stakeholders, engage different departments, define a baseline and create a framework that enables the city to understand its current situation, its future direction and vision, and the stakeholders that need to be involved in the process.”

Using the [OECD Scoreboard](#) enabled the city to gather stakeholders, engage different departments, define a baseline and create a framework that enables the city to understand its current situation, its future direction and vision, and the stakeholders that need to be involved in the process. Throughout the process, strong engagement and collaboration were observed. For instance, Dundee is implementing a waste reduction and circular economy modelling tool inspired by other cities, such as Glasgow, that are more advanced than Dundee on this front; the scoreboard was useful in bringing all stakeholders together and pulling initiatives together in a strategic way. Ms. Clarke underlined the city's need to now emphasise measurement, strategic vision, innovation and finance.

Mr. Jarkko Havas, Lead, Insights & Analysis, Ellen MacArthur Foundation, emphasised that lessons learned from the Foundation's work with the private sector to measure circularity at the company level could be useful to the public sector and cities.

“Adopting a common definition of the circular economy is a key first step to measure progress towards the circular economy.”

Adopting a common definition of the circular economy is a key first step to measure progress towards the circular economy. The circular economy aims to eliminate waste, keep materials and products in use and, if possible, to regenerate natural systems. Given that resource use is expected to double by 2050, it is of crucial importance to decouple finance and resource use. Moving away from the recycling agenda is also essential, as innovative, upstream and systemic solutions are needed.

The Ellen MacArthur Foundation considers three different pillars regarding measurement, and much of this seems to be reflected in the OECD's work:

- The enabling conditions: for instance, innovations for the circular economy, leadership, ownership of the topic at the city level, systemic factors such as collaboration, etc.

- Circular economy outcomes (material flows, measuring renewable energy to achieve these material flows, water flows, etc.) and finance (especially company-level measurement).
- Impacts on biodiversity and socio-economic outcomes beyond GDP, among others.

These categories are already included in the OECD indicators. Harmonising categories across all organisations to talk the same language would help to link measurement at the city level and measurement at the business level.

Discussant: Mr. Peter Börkey, Principal Administrator, Environment Directorate, OECD

Mr. Peter Börkey, Principal Administrator, Environment Directorate, OECD, thanked the panellists, the moderator and the organisers for the richness of the session. Mr. Börkey highlighted the crucial importance of measurement for the effective management of the circular economy transition at all levels (firm, local, national, finance, etc.) as what is not measured cannot be managed.

“Measuring is key to tracking progress towards the circular economy: what is not measured cannot be managed.”

The OECD has a key interest in measurement. From the perspective of an international organisation, the possibility of conducting comparative analysis is important. Measurement also enables local and national governments to benchmark themselves.

The inputs and outputs of systems are essential starting points for measurement. What needs to be measured is how these material inputs circulate through the economy and how the circularity of reuse, repair and recycle strategies progresses. Measuring the impact of such strategies on the environment and the security of supply is also important.

Some indicators and data, in particular regarding output (e.g. waste, recycling, material flows), are currently available. However, all indicators currently in use have been designed for a linear economy, and very few indicators enabling the measurement of R strategies beyond recycling, such as reuse, refurbishment, and so on, are available. The [OECD Scoreboard](#) represents a step forward for governance indicators on policies and processes. In addition, there are significant difficulties in connecting previous indicators to new goals and outcomes. However, there is increasing activity at the subnational, national, and international level to address these challenges.

The OECD is taking part in a number of international projects related to these challenges, for example: i) the [Bellagio Declaration](#) for the measurement of circular economy transitions, ii) the [PACE](#) platform enabling multi-level dialogue, and iii) the UN Economic Commission for Europe (UNECE) [Task Force on Measuring Circular Economy](#) under the auspices of the European Conference of Statisticians.

Finally, the OECD aims to develop a harmonised framework to monitor progress, support policy development, and provide guidance on communication of circular economy information. However, this will be challenging and, at times, lengthy: some indicators will be operational rapidly, while others will require more time to be developed and implemented.